

A REVIEW ON THE CLASSIFICATION OF TOTAL QUALITY MANAGEMENT

SUSHREE SANGITA RAY¹&SHRUTI TRIPATHI²

¹Faculty HR&IT, Amity Global Business School, Bhubaneswar, India

²Assistant Professor at Amity University, Noida, India

ABSTRACT

This paper presents a literature review and classification scheme for Total Quality Management Research. The result shows that an increasing volume of TQM Research has been conducted for a diverse range of areas. The articles have been classified and result of these is presented into four main categories. That comprises of Understanding of TQM, Information Technology and TQM, Global/Country Perspectives and Benchmarking. Analysis of the selected research articles is carried out and gaps in the research are identified. A comprehensive list of references is presented. This review is intended to provide thrust in research and help simulate further interest.

KEYWORDS: Total Quality Management, Benchmarking, Quality, Performance & Information Technology

Received: Jun 02, 2017; **Accepted:** Jun 20, 2017; **Published:** Jul 18, 2017; **Paper Id.:** IJBMRAUG20172

INTRODUCTION

Stiff competition in the Global market has prioritized Quality as a key management concern for most of the organizations across the world. To improve the efficiency of any organization, implementation of TQM plays a major role. In order to enhance the performance of any firm with respect to Quality, customer satisfaction, productivity and profitability, TQM's systematic approach of quality improvement is a must for empowering each and every member of the organization, TQM is the best management philosophy ever utilized. Its purpose surrounds continuous long term and a sustainable improvement both in quality and productivity. Along with the basic functions of an organization that is improvement of quality and productivity, TQM plays an important role in eradicating the fear of change among employees. It is well said that --- "Prevention is better than cure." This philosophy is focus of the major principles of TQM which states that cost of correction is far more than cost of prevention. Globalization and Economic liberalization have made high dynamic change in national and international competitive environment. Enhanced demand in the organizational competitiveness is an outcome of this dynamic change. This change has shifted focus towards the customers and how to retain and increase their satisfaction. TQM is considered to be the best philosophy in management for any organization. Placing the customer value and their needs on the top is what TQM seeks to do. TQM is a valuable tool to develop strategic info maps and info charts. Infomaps and Infocharts are used as models and templates for planning a route which would help create inter organizational data base which provides area wise knowledge database and user can generate the query report. TQM is defined as a systematic *philosophy of management which emphasizes on continuous improvement in each and every function of an organization, right from acquiring resources to providing service to the customer. In order to improve the performance in every organization TQM is the best practice taken up by any organization.*

TQM goes beyond the production quality approach and it encourages employee involvement in the

organization, and includes function like administration, communication, manufacturing, marketing, distribution, planning and training etc.

Qimtek.co.uk (2017), the issues that plagued was related to poor delivery, quality and ROI. It was then that BS5750 was implemented by Dutton Engineering in 1984 as a response to this issue, although it failed to measure up to its expectation. In 1984, the launching of the principles of Quality improvement program of the organization by one of their customers through their supplier, that Dutton applied TQM.

Table 1

TQM Definitions	
Given By	TQM Definitions
Organizations	
British Standards Institution standard BS 7850-1:1992	<i>A philosophy based on management which seeks to integrate human resource with material resources of an organization to achieve the organizational objective in an effective and efficient manner.</i>
International Organization for Standardization standard ISO 8402: 1994	<i>It's a combination of teamwork, involvement of all its stakeholders with the aim of achieving the highest goal of both customer satisfaction, organizational success and above all the growth and development of the society on a long term basis.</i>
The Chartered Quality Institute	<i>It is a philosophy which aims at getting the best, achieving the organization goal while still adhering to the basic human values of ethics and principles.</i>
American Society for Quality Control (ASQC)	<i>(TQM) is a strategy seeking customer satisfaction through number of ways and means like enhancing the various processes involved, the final product, the service associated with it including the work culture of the organization concerned it includes not only customers but also every single person associated with the organizational goal and this means its employees as well. Quality gurus such as Philip B. Crosby, W. Edwards Deming, Armand V. Feigenbaum, Kaoru Ishikawa, and J.M. Juran helped to develop the framework of the tool for its effective implementation for organizational success.</i>
Researchers	
Duane, Hokisson, Hitt, (2009)	<i>TQM encompasses number of factors like making advances in developing techniques for problem solving, helping companies achieve economy, boost teamwork, promote a discerning customer base which helps identify between good and bad, reach deadlines and coming up with new products from time to time.</i>
Flynn, Schroeder and Sakakibara (1994)	<i>TQM seeks to create products and services with high standards of quality, taking into account the customer's needs, their expectations, and build a strong foundation based on customer support.</i>
Ho and Fung (1994)	<i>TQM is a way to increase the competition, make the organization flexible and increase the efficiency of the organizations while curbing unnecessary expenditure and monitoring employees for whole hearted participation for improving the process.</i>
Suhanshu Bala Singh and R. S. Dhala, (2011)	<i>TQM is an umbrella term which means the whole of the organization is involved in the process of achieving organizational success like getting customer satisfaction, reducing unnecessary expenditure of resources, increasing the level of service.</i>

(En.wikipedia.org, 2017),(Anon, 2017),(Qimtek.co.uk, 2017),(Gharleghi, 2017),

Classification of Literature on TQM

The classification framework shown in Figure 1 is based on the review of the literature and the nature of TQM Research which is meant to provide an understanding how the subject has evolved and its progress till date. As TQM is a new concept the first and foremost important thing is to have clarity of its definition. There are several researchers who have defined TQM in different ways and in different perspectives. Further wide spread presentation of TQM requires resolving vital quality issues. However, attempts of TQM implementation at the local level are not so visible as compared

to the international level. In the International level countries like US, Japan, European countries and even a few other developing countries have shown inclination towards implementation of TQM. There is a huge amount of investment in the implementation of TQM. Hence, it needs to be benchmarked in terms of return; it would give to the organization.

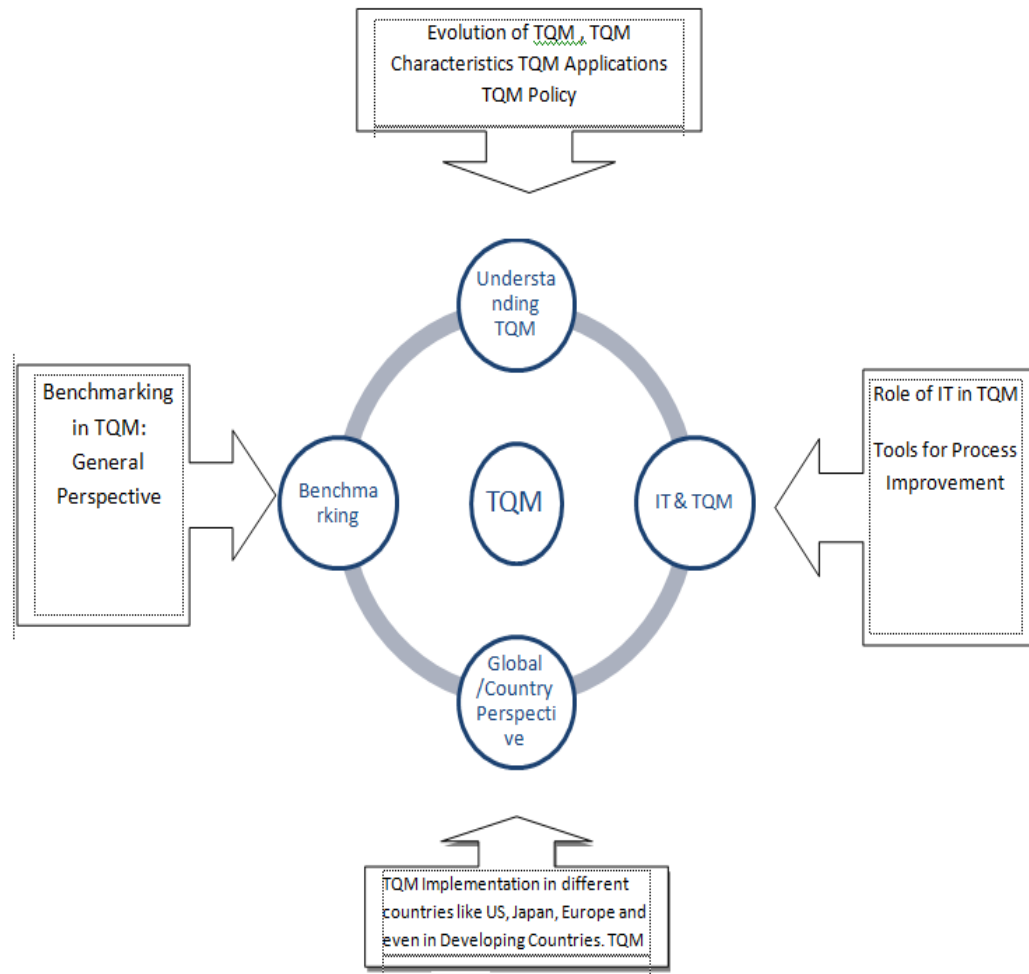


Figure 1

*****TQM implementation in India --- needs to be added in the Global/ Country perspective box**

Understanding TQM

Evolution of TQM

TQM is an endless journey for a company. It dates back on May 16, 1924, when Walter A. Shewhart of Bell Laboratories used start to improve the quality of telephone. It could probably first of its kind of control chart. It was Shewhart who came up with the ideas on how to enhance quality of telephones. There were around 40,000 people involved in the process of making telephone equipment at Hawthorne's Electronics, with around 5,200 people working in the inspection department. Shewhart conducted classes in statistical methods at Hawthorne at various other plants. Soon western Electronic came out with a book on methods of quality control and that was considered the ultimate in industrial quality control. It is responsible for improving quality in both the services and manufacturing sectors and imparting and improving the quality of life.

HOLUSHA, (1993), during the post World War-II scenario, in 1950 Dr W. Edward Deming introduced quality revolution to Japanese senior officers. Rising from the ashes of World War –II, it was observed that many Japanese companies came up with innovative ways and means to achieve quality.

Deming was more of a philosopher who felt that TQM is responsible for improving quality in both the services and manufacturing sectors and improving people's quality of lives. Deming's method believed in dynamism and change. And two important points explained by Deming were consistency of purpose – "it's you who would identify what business you are associated with it and how you can excel in it" and continual improvements – "Instead of complacency, continuous improvement is more needed in quality otherwise that would lead the Organization to stagnation". According to Deming there were two ways of Process Improvement: 1. The first way of process improvement was the change of the common causes that was systemic and 2. The other way concerned with eliminating the "special causes which produce non random variation within systems. Deming recommended a statistical process control to differentiate between Systemic and special causes and this resulted in quality improvement as a whole. Deming's definition of quality is the lesser the variation better the improvement in quality.

Juran(2009) defines Quality in terms of its usability. Juran developed a holistic approach which covered the entire life span of a product right from design, process development, customer relation and field service.

After that Kaizen was implemented in industries all over Japan. "Kaizen" is a fundamental concept of quality management and is an important part of both TQM and 'lean manufacturing'. Kaizen exists rather than being imposed.

During 1970s, the business tycoons of America were compelled to follow the Japanese, especially in automobile and electronics sectors. Japan emerged as a market leader by spreading the market share of America by offering superior quality products at affordable prices. This created an economic crisis among US Industry and this enforced the U.S. corporations to be a part of the quality movement.

Quality in Japan

The 1940's saw Japanese products being dubbed as poor imitations and cheap. But, industry experts were quick to realize this issue and decided to come up with new and superior quality products. They decided to take advice from quality experts such as Deming, Juran and Feigenbaum to produce high quality products.

Deming was of the opinion that they could achieve it in 5 years time, but many Japanese were skeptical about it. But, they implemented his advice. Perhaps the Japanese felt it would be indecent not to believe in Deming's views or may be it could embarrass him not to follow his suggestions. The reason could be many but finally they took the advice of all the experts and moved ahead.

During the 1950's, the two concepts of quality control and management surged ahead very fast and were the buzz words in Japanese management circles. The concept of quality did not limit itself to management level only. The concept of quality circles emerged in 1960's. By definition quality circles means a group of workers who volunteer to meet and take up for discussion issues pertaining to improving workplace, and presenting their ideas to the management through presentations.

A corollary to the quality circles was employee motivation. This made the employees felt they got noticed for their performance. Another consequence of the quality circle was improving not just the quality of products but improving

each and every feature of the organization. This was the stepping stone towards the concept of total quality.

Total Quality

The word was viewed in an article penned by Feigenbaum presented at an International conference on quality control in 1969 in Tokyo. It was an umbrella term covering a wide gamut of issues in an organization.

Total Quality Management

The 80's and 90's witnessed a new and distinct period in quality control and management. This later evolved as Total Quality Management (TQM). The success of Japanese companies after implementing quality theme, now U.S. companies started implementing their own versions of quality management. TQM which covered a wide range of quality centered steps, programmes and procedures, occupied centre stage in the Western world's quality movement. TQM is typically defined as: customer focus, the involvement of all employees, continuous improvement and integration of quality management into the total organization. The many definitions that were propounded meant the same, yet there was not much clarity regarding such concepts as what kind of practices, policies and activities were required to execute to fit the TQM definition.

The year 1988 marks a historic period for Quality Management with the instituting of the Malcolm Baldrige award in the United State. As a reaction to this model the European Foundation of Quality Management in 1992 came up with a similar model. EFQM of European Model is the basis for European Quality Award.

As companies vie for winning awards, the objective of instituting such awards was to motivate organizations to adopt more and more principles of quality management. Now a day's Business Excellence model are introduced with more clear quality approaches. The new era has seen a large number of organizations both big and small opting for TQM or Business Excellence. Realizing the need for support meant for the development of this aspect, the centre for organizational Excellence Research instituted BPIR.com in April 2002.

During late 1970s and 80s, Crosby came out, with influential concepts such as “**Quality is Free**” and “**Zero Defects**”. As per Crosby judgment, companies were able to reduce their costs to a minimum of 2.5% from a huge 15 to 20 percent if they took the appropriate measures right from the beginning. This included prevention and appraisal activities which companies resorted to maintain their standards of excellence. (En.wikipedia.org, 2017)

Ishikawa (1985), states that TQM should be a combined effort of all concerned in the organization from the top to the rest of the employees. He stressed that to implement quality control, one must design, develop, produce and provide a quality product which is available within a budget is useful and satisfies the customer as well has a satisfying after sale service also.

A broad review of literature of TQM recommends that TQM covers a wide range of different topics and its viewpoints. In the area of execution of TQM, there are three widespread suggested base articles written by Saraph et al. (1989), Flynn et al. (1994), and Ahi et al. (1996), respectively. Ahi et al. (1996) imposed that for future research on TQM it is essential to undertake a combination of the three frameworks. The frameworks are Saraph et al. Role of divisional top management and quality policy, Role of quality department, Training, Product/service design, Supplier quality management, Process management/ operating, Quality data and reporting, Employee relations. Asserting, Flynn et al. framework Quality leadership, Quality improvement rewards, Process control, Feedback, Cleanliness and organization,

New product quality, Interfunctional design process, Selection for teamwork potential, Teamwork, Supplier relationship, Customer involvement. and Ahire et al. framework Top management commitment, Customer focus, Supplier quality management, Design quality management, Benchmarking SPC usage, internal quality information usage, employee empowerment, employee involvement, employee training, product quality, supplier performance.

Source: <http://shodhganga.inflibnet.ac.in>

The current research followed this proposal which attempted to incorporate their TQM forms as far as possible.

“TQM is a management belief for constantly improving total business performance through on leadership, supplier quality management, vision and plan statement, evaluation process control and improvement, product design, quality system improvement, participation of employee, reward and recognition, training and education, and customer focus”.

Total Quality Management Characteristics

The key characteristics given priority in the implementation of TQM are focus customer, uninterrupted process, error-free approach, involvement of employee, recognition and rewards, synergy in team work and modus operandi.

TQM Application

Table 2

TQM Principal facets	
TQM dimensions	Description
Key role of Top management	Proper implementation of TQM depends mostly on the dedication of the Top management. Top management has to play the major role of a leader for motivating the workforce.
Relationship with customers	The first priority of the work force should be the satisfaction of the customers and consumers needs.
Relationship with the Supplier	While selecting suppliers, standard of the product need to be given more worth compared to price
Management of Workforce	Providing training, empowering the workers and having team work plays an important role in guiding the workforce management.
Design process of the Product	All units need to be involved in the designing of the process and perform unitedly to achieve a design
Flow of Process management	Housekeeping has to be maintained as per the 5S concept. Appropriate instruments need to measure the improvement of both statistically and non statistically. There should be the presence of Zero-defect process.
Quality data and reporting	Authentic information must be easily available and the information should be a part of the visible management system. Records consisting of scrap, repetition of work, and price of materials about quality indicators should to be maintained.

Source: Practical Applications of Total Quality Management (TQM) – Part I (July 10 2010)
<http://nkoyock.net/blog/?p=52>

TQM resulted from the implementations that were made in manufacturing companies like IBM, Toyota and Motorola. Service companies like Lands' End, Federal Express, Disney, Avis and Ritz Carlton Hotels have taken the initiative in creating a well-designed quality management program that comprises of performance, courtesy, and training of

the employee. (www.iracst.org/ijcbm/, 2017)

Efficiency and Effectiveness

Elsiddig (2011), Efficiency was defined by business dictionary as "**Generating the maximum amount of profit margin while working on a budget with less effort**". AbulrahmanTawfique defined "Efficiency of the firm depend upon the optimal utilization of an organization's existing resources which includes its finance, instruments, ingredients and workforce with the idea of moving in a planned manner.

Effectiveness is based on a firm's objectives and its results, therefore it can be interpreted as follows: "**Effectiveness is the ratio of the actual output to the expected one as per below formula**"

$$\text{Efficiency} = (\text{Used Resources} / \text{Planned Resources}) / \times 100$$

TQM Policy

A **quality policy** may be interpreted as a set of principles established by the management and experts on quality to explain the aim of quality/standards of a firm which is about actual quality or standards and the rules put in place to implement them as per the policy of the management across department. Quality policy management is considered as a long term strategy of an organization.

An organization's policy on quality is a well documented piece of written information which seeks to be communicated and made understood to one and all in the organization. Section 5.3 very clearly states the reasons for implementing quality policy.

Section 5.3 of the ISO 9001 Standard Requirement

Table 3

S No.	The Quality Policy to be ensure by Top management :
01	<i>is keeping with the objectives, mission, and vision of the organization</i>
02	<i>Promising to conform to these standards and constantly enhance the quality management system for better effectiveness</i>
03	<i>Giving a structure for implementing quality objectives.</i>

[http://isoconsultantpune.com/iso-90012008-quality-management-system/iso-9001-requirements/iso-9001-clause-](http://isoconsultantpune.com/iso-90012008-quality-management-system/iso-9001-requirements/iso-9001-clause-5-4/)

5-4/

LITERATURE REVIEW DETAILS

Table 4

S No.	Title of the Paper	Name of the Author	Year of Publication	Objective	Research Methodology	Findings	Limitations	Scope
1	Total quality management and service quality: an exploratory study of quality management practices and barriers in service industry	F. Talib et al.	2015	<ul style="list-style-type: none"> to identify those TQM practices that support service quality and are most critical for the management of service quality in different service industries to explore the barriers of TQM implementation in order to make managers of service industry know them. 	A literature review	From the literature review, 17 major TQM practices were found critical for the industry performance. These were frequently used by different researchers in the service industries. Also, a total of 12 major barriers were identified from the literature which hinders the implementation of TQM successfully		Further in-depth investigation is needed to explore the relationship between TQM practices and identified barriers in context with the Indian service industries
2	An Empirical Investigation of TQM Barriers in Indian ICT and Banking Industries	Faisal Talib, Zuhur Rahman	2014	<ol style="list-style-type: none"> To identify and rank the TQM barriers in Indian ICT industry; To identify and rank the TQM barriers in Indian banking industry and; To investigate the presence of identified TQM barriers across ICT and banking industries. 	A literature review & a descriptive crosssectional study design	The result shows that "employees' resistance to change"; "attitude of employees towards quality"; "inadequate use of empowerment and teamwork" and "lack of continuous improvement culture" are some of the major barriers which are extensively present in these two industries and affects the successful implementation of TQM program. This research also revealed that out of 12 TQM barriers, six barriers namely "inadequate use of empowerment and teamwork"; "lack of continuous improvement culture"; "lack of proper training and education"; "no benchmarking"; "poor planning"; and "lack of top-management commitment" showed significant difference in their presence across Indian ICT and banking industries while rest six barriers have no significant difference in their presence.	Low sample size	To implant this research work to new and emerging service industries where researches are at nascent stage.
3	Implementation Of TQM For Improving Organizational Effectiveness	Shiv kumar Sharma, Shivanand Vishnu Gupta , Rahul Singh	2014	The aim of this paper is to understand the importance of Total Quality Management (TQM) philosophy or Business Excellence Models-Strategy.	An analytical study on the relationship between implementing total quality management (TQM) and organizational effectiveness in an industrialized country like India. Organizations worldwide have been exploring and developing ways to improve business practices to gain competitive edge	Large companies had higher Implementation levels across almost all practices except for teamwork and open organization when compared to small- and medium-sized companies. TQM practices were statistically more significant in manufacturing companies compared to service companies and firms having a higher degree of innovation also showed higher levels of TQM practice implementation.		This paper is an attempt to integrate the concept of TQM implementation within a broader perspective of business as a part of corporate strategy in an organization. The concerns and issues for TQM implementation are discussed. The paper attempts to give a holistic perspective of TQM implementation as a part of Business Excellence Strategy Implementation.
4	The impact of human resources and Total Quality Management on the enterprise	Monika Izvercian, Alina Radu, Larisa Ivascu, Ben-Oni Ardelean	2014	The view of the authors with respect to the relationship that exists between TQM, HRM, Competitiveness and ISO 9000 and the impact of this relationship on the sustainability of the enterprise	The study was based on the formulation of a model which comprised of human resources and TQM practices are kept as independent variables and human resource competitiveness is the independent variable too	HRM and TQM have significant effects on the competitiveness of human resources. The greater the degree of presence of good human resource competitiveness and hence the competitiveness of the enterprise. They concluded with the statement as-- "The employee is a Good (Product). The client is a Guide." From the analysis the Total Quality Principle can easily be applied to improve the quality of human resources and thus to maximize its competitiveness.	Not mentioned	The authors developed as series of theoretical models which can be applied to enterprises of all sizes in any business or country
5	IMPACT OF TQM IMPLEMENTATION ON PRODUCTIVITY AND QUALITY - A STUDY AT GENARAL MOTORS	Dr. S.J.MANJUNATH; G. ARUN KUMAR	2013	To determine the impact of TQM implementation on high productivity and quality	The relevant data for the study has been collected from both primary and secondary sources. Simple random sampling used to collect the required information through structured questionnaire by using five point likert scale. Descriptive analysis and anova was used in this research to analyze the data. Samples of 20 employees were selected for the study.	The result revealed that there is a significant relationship between TQM implementation and high productivity and quality.		Many organizations may not use the term TQM anymore but is still very much part of most business thinking. It is seen as being a way in which a business can add value to its product and to gain competitive advantage over its rivals.
6	Analyzing the effectiveness of Quality Management Practice in China	Sarah Jinhui Wu, Dongli Jiang	2013	The study examines the effectiveness of different Quality Management Practices in Firms operating in China. According to March's framework Quality Management Practices are organized by two orientation, that is Exploration vs Exploitation. The study investigate whether Exploitative oriented quality practices are more effective than exploratory oriented quality practices or vice versa in China.	Data were collected from Quality Managers of companies located in 7 areas in China. 2. Structural Equation Models were used to assess the effectiveness of explorative quality practices and exploitative quality practices on multiple performance dimensions. Overall exploratory oriented practices contribute more towards most of the performance goals than exploitative oriented practices.	The National Culture perspective in the sense that current Chinese National Culture profile is dramatically different from the traditional wisdom particularly in power distance. The result provide an insight full guidance for quality managers to allocate scarce resources to make quality practices more effective in operations sites in China. It offers a new focus of launching Quality Management practices in specific cultural environment.		
7	The Quest for Excellence: A Case Study of TQM Practice in Tata Steel	Dr. K.K.Garg Pransav Mishra Sumit Sehrawat	2013	The case examines the quality initiatives taken by Tata Steel is the first integrated steel company in the world to win the world's highest award of quality, the Deming Application Prize. This paper aims to address the issue of excellence of quality strategy in a Deming Application Prize winner company.	A case Study Analysis	<ol style="list-style-type: none"> Globalization has thrown new challenges as well the opportunities. Implementation of TQM leads to improvement in performance. Culture is an important issue for the success of TQM. Awards models provide a roadmap, a framework for excellent. 		
8	Green Lean Total Quality Information Management in Malaysian Automotive Companies	Noor Azlina Mohd. Salleh, Salmiah Kasolang, Ahmed Jaffar	2012	To measure the Total Communication Efficiency after implementation of Green and Lean TQM system	A survey questionnaire was developed and distributed to 30 highly active automotive vendors in Malaysia and analysed by Minitab V 16. Descriptive Data through questionnaires developed build on ISO 14001: 2004			
9	Relationship of TQM and Business Performance with mediators of SPC, Lean Production and TPM	Ahmad, M.F, Zakuan, N, Jusli, A. and Tekale, J	2012	To investigate the relationship among TQM, Total Productivity Maintenance (TPM), Statistical Process Control (SPC), Lean Production and Business Performance.	The study was based on creating hypothesis testing. There were 10 hypothesis.	All the hypothesis considering the relationship between TQM, TPM, SPC, Lean Production and Business Performance were proved.	Not mentioned	Conceptual framework have been proposed for future Research
10	The impact of adoption of TQM Practices on firm's efficiency and effectiveness: An analytical study of Saudi Poultry Processing Plants	Ehaj Abdelnoura, Elsidid Mhass & Dr. Iram Khalid Alawad	2011	the study is about the impacts of adoption of TQM practices on efficiency and effectiveness of Poultry Processing Plants in Saudi Arabia central Region. It also examined the mediating effect of efficiency on TQM and effectiveness linkage	The Study was done through Closed ended Questionnaire that was divided into three parts: Demographic Information about the study sample, Implementation of TQM and to measure efficiency and effectiveness.	It indicates that the TQM practices have positive impact on poultry processing plants, efficiency and effectiveness with a partial mediating effect of efficiency on TQM and effectiveness linkage	Out of 8 plants in Saudi Arabia, Central Region 3 were only chosen. The respondents were confined to Quality team, production supervisor, TQM Management and Production Managers.	The Limitations has created the scope for further research.
11	Enhancing production performance and customer performance through Total Quality Management (TQM) strategies for competitive advantages	Aravati Agas, Zafran Hassan	2011	To examine the importance of incorporating TQM in the Malaysian Manufacturing Industry. The study majors senior production or TQM managers perception of TQM and level of performance of their companies. As well as it investigates the relationship between TQM, Production Performance and Customer related performance and teh associations	The analysis was done through statistical methods such as Pearson's correlation and Structural Equation Modeling (SEM). As well as the study comprised of testing of the hypothesis. The sample size was 169. For this sample size a questionnaire of 7 point interval scale was used. Face to face interview with the Managers were carried out to ensure the information accuracy.	The result indicates that manufacturing company should emphasize greater attention to both TQM processes and a greater degree of management support for TQM enhancement initiatives	The respondents were confined to Senior Production or Quality Managers	The respondents can be enhanced

12	Identifying the Key Practices of TQM in Indian Service Industries: An Empirical Analysis	Faisal Talib; Zahur Rahman; M.N. Qureshi	2011	To identify and rank the key TQM practices necessary for the successful implementation of TQM program in Indian service industries.	A survey-based empirical research; descriptive cross-sectional study design	The findings presented in this paper support the argument that service managers need to realize that the practices should be implemented holistically rather than on a piecemeal basis to get the full potential of the identified TQM practices	Lack of in-depth investigation in exploring the relationship between TQM practices and company's quality performance within the Indian service industries.	The research can be extended to some emerging Indian service industries like education; transportation, real estate; recreational services; wholesale and retail trading; and business consultancy services and hence, identifying practices for successful TQM implementation to achieve better performance.
13	The Effect of TQM on Performance in R&D environments: A Perspective from South Korean Firms.	Daniel I. Prajoga, Soon W. Hong	2008	The objective of the paper was to examine the effectiveness of Total Quality Management (TQM) practices in R&D environments by demonstrating the effect of TQM practices on R&D performance in terms of product quality and product innovation. The research has also been done on the relationship between TQM and R&D performance	The data was collected from 130 R & D divisions of Korean manufacturing firms. Two research questionnaires were developed, the first questionnaire was based on the implementation of TQM principles in R&D environments and the second was focused on the effect of TQM on R&D performance. The TQM practices were evaluated with the six criteria of Malcom Baldrige National Quality Award and R&D performance measures consists of quality and innovation aspects.	The finding suggested that the integration of the implementation of TQM practices in R&D division as well as the significant contribution of TQM is there for R&D performance. The suggestion is that TQM is a set of generic principles that can be adopted in environments other than manufacturing or production area.		
14	TOTAL QUALITY MANAGEMENT (TQM) IMPLEMENTATION IN AUTOMOTIVE INDUSTRY: A CASE STUDY OF SELECTED FIRMS IN INDIA	Mostafa Moballeghi	2007	1. To assess benefits of TQM in the selected firms. 2. To identify critical success factors in TQM implementation. 3. To identify barrier factors in TQM implementation. 4. To list the similarities in approaches to TQM implementation in the selected firms. 5. To evaluate the differences in approaches to TQM implementation in the selected firms	The research design chosen is based on social, non-experimental, empirical and qualitative science	It presents a brief summary of within case analysis which includes the major findings of each company. It also presents a summary of cross-case analysis and shows major similarities and differences between the companies.	1. One of the limitations of this study was the willingness of the companies in giving permission to conduct the study. 2. The current research was limited to some of the automotive or automotive component industries in India, which have implemented or in the process of implementing TQM.	The research is a multiple case study to investigate TQM implementation in selected automotive and automotive component industries in India.
15	TQM for Information Systems: Are Indian Organizations Ready?	Jamshed Siddiqui, Zahur Rahman	2006	1. The awareness usage and length of experience of TQM in IS 2. The extent of top management support for TQM in IS 3. The extent of benefits realized by TQM in IS 4. The extent to which the TQM principles are applied to IS 5. Relationship between IS-TQM realized benefits and top management support 6. Relationship between the IS-TQM realized benefits and TQM principles implemented.	A questionnaire-based survey conducted amongst IS professionals of some Indian companies it uses multivariate analysis to quantify the extent of top management support for TQM in IS, the extent of benefits realized by TQM, relationship between IS-TQM realized benefits and top management support and relationship between the IS-TQM realized benefits and TQM principles implemented.	Indian IS managers have a fair understanding of TQM and this shows an upward trend. Top management support for TQM in IS, the extent of benefits realized by TQM for IS and better quality of services is presumed to be the most important benefit realized by the firm	The findings fall in compliance with other studies but contribute to research in the unique Indian Market for a potential global investor.	In the present study an attempt has been made to quantify the empirical aspects of TQM for the IS of organizations. It was reckoned by the perusal of past publications that organizations have had unqualified success in pursuing quality management on account of multiple failures such as compound focus of programs leading to dilution of results, assuming that action and result come in a package and lack of stepwise appraisal of schemes and achievements
16	The Relationship between TQM practices and their effects on Firm Performance	Hale Kaynak	2003	The objective behind this study was to identify the relationships that has been observed between the practices of Quality Management and the different levels of Organizational performance	This study was conducted with the help of a proposed research model and the proposed hypothesis were tested by cross-sectional mail survey method. For Data collection firms that are operating in US are focussed. The proposed hypothesis has been supported by the test of the Structural Model	It suggests that there is a positive relationship that exists between the extent to which the companies implement TQM and Firm Performance. The assessment of management leadership is necessary when the effectiveness of TQM implementation is investigated. Management leadership is directly related to training, employee relations, supply Quality Management and Product design and indirectly related to training, employee relations, Supplier Quality Management and Product design and indirectly related to Quality data and reporting and process management.	1. The multidimensionality of TQM construct should be recognized. 2. A broad set of performance variables including operating, market and financial measures relevant to TQM practices should be measured. 3. The researcher should go for analysis other than multiple regression or correlation analysis	
17	Human Resource Management Practices in International Joint Ventures in Mainland China: A justice analysis	Kwok Leung, Jessica Y. Y. Kwong	2003	This article reviews that the measure HR functions in JVs: Recruitment Compensation, Performance appraisals, training and Development and Exit. The source of Disagreement between the Chinese partner and the Foreign Partner in each of these Human Resource Practices are analyzed from a justice perspective.	It has been observed Chinese and Foreign partners differ widely across all the measure areas of HR Practices. The first difference is the scope of concern. The Chinese focus on the socio-economic concern and the JUV environment where as the Foreign partners are concerned with the effectiveness of JUV. The second difference is based on rules that is Chinese favour equality and need whereas the foreign partners favour merit based rules; Chinese favour rules that they take in to account contextual demands and mutual agreements whereas Foreign partners favour procedural that are contractual and legalistic. The third criteria is relevant to justice decisions that is China favours group performance, seniority, previous contributions and Quasi whereas the Foreign partners favour individual performance and current contribution	With the implementation of the ISO 9000 quality system, the quality of TQM enhanced. The EFQM model makes it easy to enlarge the quality management viewpoint and to take an objective look at the organization and the result it achieves. It helps to relate the different aspects of the organizations to one balanced viewpoint. It also help to set priorities in the improvement projects and it is an adequate model for evaluation of the achieved improvements.		
18	The Benefits of TQM	H.P.A. Geraedts, R. Montemarie, P.P. Van Rijk	2001	To review the implementation of the ISO 9000 quality system in the department of Nuclear Medicine. Their study also included the benefits of working with ISO 9000 standards and justified the shift of from ISO 9000 to EFQM model. They also emphasized the application of the EFQM model and futuristic TQM implementation.				
19	Total Quality Management and sustainable Competitive Advantage	Richard Reed, David J. Lemak, Neal P. Mero	2000	The primary purpose of this paper is to explore the validity of the claim by drawing on the market based theory of Competitive advantages, Resource based theory of the firm and system theory		The content of TQM is capable of producing a cost or differentiation based advantages and that the tacitness and complexity that are inherent in the process of TQM have the potential to generate the barriers to imitation that are necessary for sustainability		
20	The Relationship between TQM practices and operational performance	Danny Samson, Mile Terziovski	1999	The study was to examine the TQM practices and operational performance of a large number of manufacturing companies in order to determine the relationship between these practices, individually and collectively as well as the firm performance	The data was collected from a large database of 1200 Australian and New Zealand. The study was a cross-sectional and descriptive of a given sample at a given point in time where as the quality awards are being used to measure & suggest dimensions of improvement in order to increase organizational practices, quality & Performance	The relationship between TQM practices and organizational performance is significant in across sectional sense. In that TQM practice intensity explains a significant proportion of variance in performance. It was founded that behavioural factors such as executive commitment, employee empowerment and an open culture can produce more strongly than TQM tools and techniques such as process improvement, benchmarking, information and analysis	The study failed to establish a link between MBNOA & Organizational Performance	
21	Total Quality Management in SMEs	A.GHOBADIAN DN GALLEAR	1996	To examine the difference between the characteristics of SMEs and large organizations; The relation ship between the size of organization and inherent characteristics of TQM.	A survey questionnaire was developed and distributed to 30 highly active automotive vendors in Malaysia and analysed by Minitab V16. Descriptive Data through questionnaires developed build on ISO 14001: 2004	Introduction of TQM had helped to sharpen their market focus, to improve the efficiency, better harness their HRs & to improve the competencies. Introduction of TQM enhances long term survivability & growth. Implementation leads to cultural changes. Resistance of change was due to the small number of management layers, lack of strong functional interests and absence of rigid structure.		
22	Total Quality Management in the small Business Environment	Cengiz Haksever	1996	The article aimed to propose a conceptual framework for implementing TQM in the small business environment with special reference to the small firms in the united states	The data was collected from various small large and small scale business firms for the study.	It was suggested that large companies that have implemented TQM could teach small companies about their experiences and send some of their experienced employees to help the small firms to start TQM. Some of the corporation have already began to provide such assistance to their vendors. Universities and colleges can also help to develop research programs to identify traits of successful implementors as well as common problem encountered in specific industries		

Literature on Understanding TQM

Technological Issues

TQM and its application in IT in many organizations have been practiced successfully. Various firms are able to supply good quality products and services due to use of IT in TQM.

The sustenance of the firms depends on overcoming these challenges posed by stiff competition. Technology acts as a catalyst in creating gainful employment and giving job satisfaction.

S.L. Ahire(1996), D.Y. Golhar and Waller M A(1996),F. Vouzas and A.G. Psychogios, & F.W. Dewhurst, A.R. Martinez-Lorentz and C. Sánchez-Rodríguez gave nine main aspects of TQM described in TQM-IT literature, it is as follows; Involvement of the entire workforce, constant process improvement, regular training, joint efforts of organization's workforce, empowerment, commitment and support from top-management, culture change, flat organization and Customer satisfaction.

TQM is the basic belief in management which uses certain basic values like expanding business, maximizing profits, improving productivity, while doing away with rework, reducing waste, rejects, customer dissatisfaction and unnecessary expenditure (Deming, 1986). Witcher(1990), defined TQM as a combination of three terms i.e Total, Quality and Management. Total: involvement of each and every member including customer and suppliers. Quality: requirements of customers need to be given priority Management: commitment of top level management

Sashkin and Kiser (1993) define TQM as a firm's culture which encourages satisfaction of customers by integrating the three aspects like techniques, tools and training.

Michael et al (2009) explained TQM as a set of beliefs that a firm adheres to in its pursuit of achieving quality, setting parameters of quality and constantly improving the level of quality based on satisfaction level of customers from the services. It is a belief that seeks the involvement of each and every single individual of the workforce to contribute their efforts to enhance every single procedure of the firm.

The link between the use of IT and an organization's performance has always been of vital importance in any industry. Rogers et al.(1996), Pearson et al. and Matta et al. Ang et al. created an instrument to quantify the utility of IT in TQM which helps in measuring the values of IT in TQM and how IT supports this system. Mjema (1995) affirmed that IT has played a major role regarding awareness of quality, quality improvement as well as reducing expenditure of the organization.

Tools in Process Improvement

Joseph Juran(2008) explains quality management as the "Quality Trilogy": that comprises of Planning, control and improvement.

Literature review on IT & TQM Tools

Table 5

Authors	Journal Title	Focus	Tools & Techniques
Dewhurst et al. (1999)	Quality and Reliability Management	The review of literature of this paper primarily focuses on the link between IT & TQM	Ten dimensions of TQM
Au and Choi (1999)	Information and Management	An empirical investigation by the author explain the importance of IT in improving the TQM process	Entity diagram, data flow diagram, Pareto chart, control chart
Ravichandran and Rai (2000)	Journal of Management Information System	For identifying and explaining the 11 properties of quality management and quality performances the quality and system development were developed	LISERL, framework, statistical analysis, ANOVA, cluster analysis
Palvia et al. (2001)	Industrial Management and Data System	The quality of IT to be determined was suggested as a socio-technical approach in the article.	SDLC, ANOVA, retest, pilot Test
Ali et al. (2010)	Total Quality Management	The research findings related to factor analysis of the 8 th point in TQM dimension	SPSS, SERVQUAL model
Tiwari and Chaudhari (2012)	World Journal of Science and Technology	Both IT & TQM have are greatly impacted organizations and both have been significantly researched.	Eight TQM dimensions, ANOVA

Global/ Country Prospective

Total Quality Management has been getting worldwide approval and every firm is trying to adopt and practice it. Although Dale and Lightburn have remarked that certain firms are still unwilling to implement TQM. There is a disagreement that there are a large number of organization who are using this new concept of quality management in various aspects of their business but in a superficial manner. The main reasons behind this condition is unwillingness on the part of the top management regarding enforcing TQM and quality enhancement combined with poor leadership and apathy towards any improvement.

A survey accepted by Singh to evaluate the position of TQM in India from which he discovered that among 1000, only 39 companies were surveyed and are practicing Total Quality Management to a few extent. However, he reached the conclusion that these firms are not able to differentiate between quality control and TQM.

It was Masaki Imai who ushered in Kaizen through his book of the same name. The reason behind the competitive success in Japanese organization is this 1986 Kaizen theory, which means improvement on a continuous basis based on principles like: good process good result, things based on data and facts, team work and implementation of Kaizen. The main feature of Kaizen is minute changes together lead to great consequences. Kaizen means everybody's improvement. Kai means Change Zen means good. Together they mean change for better.

It is Dr W. Edwards Deming who is responsible for bringing in this concept in Japan after World War II for which he was awarded by Hirohito. It is his book "Out of Crisis" where the principles are : consistency of purpose leads to improvement, opportunities, sustenance and job creation, new philosophy adoption, putting quality first and eliminating inspection, minimizing cost instead of hiking price, improve quality and decrease cost, providing training, leadership, providing a fearless work culture, barrier free departments, improving level of productivity, enhancing pride of workmanship of managers and engineers, encouraging education and self improvement.

In Western philosophy Kaizen means assess, plan, implement and evaluate. The Kaizen Blitz means planned effort for quick and short term goal.

Total Quality Management in Japan

The term “Made in Japan” meant inferior quality goods in the 1950’s. Today Japanese are famous for its technology, ingenuity and quality, which are highly appreciated by people across the globe. It is possible only because of the adaptation of TQM in every sphere of life. 1949 saw the emergence of quality control in Japan and a group was formed- The Union of Japanese scientist and engineers for educating and supporting quality control in Japanese firms. In Japan SQC rose to prominence in 1946 and continued to 1950. Although statistical control technique and quality control education program were established yet the top management was unwilling to practice quality control activities.

This underwent great changes in 1954, when Dr J.M. Juran delivered a talk on “Planning and Practice in Quality Control”. The period between 1955 and 1960 was chosen as the “Years of TQC”. In these years, quality control activities got wide spread support from all concerned and programs of quality control across companies. Some of the main points for participating quality control programs in Japan across companies were due to training and education, formal implementation of quality, establishing in formal quality control groups appreciation and awards and having patience were some of the measures as per Ishikawa.

TQM in the USA

Many organizations in the U.S are facing a crisis today. The predomination of U.S in market both globally and in America has changed over a period of time. Juran realized this change in the beginning of 1960s and a perceived threat from Japanese organizations. Drucker too noticed the Japanese approach to management of operation and their success. But it was not until 1970’s that American management faced threats from Japanese firms.

This knowledge regarding quality management and quality control are responsible for a buoyant economy of Japan, which ultimately showed the path to American Business on how to exercise quality control and the empirical techniques as propagated by Deming, Feigenbaum, Crosby, Juran and Deming and Geoffrey.

This was endorsed by Hayes, who certified the advantages of the different aspects like regular maintenance of equipment to prevent failure, optimum capacity of products and “thinking quality” in an item. Wheelwright stressed on quality of a product as its strength. The way the Japanese benefitted by incorporating a strategic operation policy that emphasize on quality. Garvin also stated that stress on quality as an added feature, if U.S firms wanted to recover their losses of their shares and gain better profits. These ideas led to certain changes in the theoretical aspects for a more clear approach to quality management

The Japanese model of quality management and its implementation have been often repeated in this review of literature. But a study carried out by Modarress and Ansari disclose that many conventional American Firms do not implement quality management in a full-fledged manner.

The brand new quality management method is in many ways.

As per the literature, the main reason behind the success of Japanese is the systematic and regular practice of quality tools at all stages of work by the entire workforce and always. American organizations today are initiating these ideas from their counter parts which they had sold to the Japanese in the early days of 1950.

Lakhe, R., & Mohanty, R. (1994) A research conducted by Modarress and Ansari it was discovered that out of 285 U.S manufacturing unit. Many units were still at the nascent stage of quality control practice. Techniques of Quality control have been greatly used in manufacturing units but not so much in design and engineering, research and development and various other fields. Another study carried out by Embrahimpour and Withers, revealed that both Japanese and non-traditional American companies have high level of employee involvement and use of basic SQC tools. The primary reason behind the failure of quality practices in American companies is apathy of top management towards, implementation of quality management approaches.

TQM in Europe

Lakhe, R., & Mohanty, R. (1994) some of the European countries like United Kingdom, Germany, France and Italy that have shown keen interest in practicing TQM. However, a survey conducted by Lascelles and Dale in the UK on automotive industries revealed that firms with conventional ideas were reluctant to practice quality management. But today the awareness in Europe regarding TQM applications has boosted the importance of this concept and its practice. The focus now is on process in quality improvement, training related to quality and the firm's message to the world practicing quality. Conventional approaches to quality have now been side stepped by European firms and new techniques have been implemented such as BS 5750 and ISO 9000. This is demonstrated by firms in a number of ways like equal treatment of employees, better investments and a system of reward for good performance

TQM in Developing Nations

Lakhe, R., & Mohanty, R. (1994) The developing nations have now degraded the quality of their products due to financial crunch in their country, politically apathy, illiteracy, lack of training and with no commitment from the work force. Surveys conducted revealed that many companies did not understand the concept of quality management. It was often considered an option unfortunately; many firms especially in developing nations are far removed from this concept. Many enterprises in developing nations suffer because of following reasons; absence of work force involvement in quality Enhancement practices, absence of encouragement and interest on the part of top management, considering quality as a option not as, necessity for improvement, misconception or pre conceived notion that quality means extra expenditure, lack of transparency and faith among suppliers, dealers, management and trade unions, absence of organized customers coupled with lack of awareness, political apathy, absence of quality standards and insufficient facilities for conducting test, obsolete technologies, poor education, insufficient funding in research and development and workforce training, negligence of people as far as quality of life is concerned, unnecessary social problems like terrorism, hostility, intolerance etc.

However, with enhanced competition in the form of changes in markets worldwide, alteration in EXIM policies and augmented customer awareness, some methodical initiative related to quality control have been practiced in certain emerging nations. Firms are of the belief that not only their growth but their very survival depends on implementation of quality management.

Awan, M. U., Raouf, A., Ahmad, N., & Sparks, L. (2009), the study was on the pharmaceutical wholesale market in Pakistan which highlights that the Process design (PD) plays a major role in TQM implementation. It was also found that like in other emerging nations the way Top management does not support TQM in pharmaceutical wholesale distribution companies so is it in Pakistan.

TQM in India

The term quality is not a catchphrase, but the lifeline of every business house, service industry, or social life which has undergone immense changes and has evolved over the past couple of years. The concept of quality has created all over the world, across industries and firms about the importance of quality.

The concept though has different meanings for different people. The meaning varies from values, to conformance to, fit for consumption, satisfaction of customers and providing necessities. For instance the monuments like the TajMahal, located in Agra, and the Sun Temple at Konark located in Orissa, considered the Seven Wonders of the World are hallmarks of excellence and excellent quality.

The involvement of the Indian enterprises in the race towards Quality has already begun albeit in a slow pace. Ever since the government has initiated the open market policy and liberalization. Indian companies are sharply fitted against MNC's in terms of quality product and services. The present scenario proves that Indian companies need latest techniques, approaches and concepts to face the challenges. Industry bodies like the Confederation of India (CII), Federation of Indian Chambers of Commerce and Industry (FICCI), Indian Statistical Institute (ISI), Nasscom, and premier institutes like National Productivity Council (NPC) have allowed a portion of their firms to support formulation and practice of quality education and work as consultants in these matters. The Bureau of Indian standards has made it mandatory to standardize quality as per international standards of quality.

Kapur, S. (2013, January 20) Professor Yoshikazu Tsuda, of Japan was the man behind TQM implementation in Indian manufacturing industry. He was invited by Confederation of India (CII) to introduce this concept in India and he was deputed to India by Japanese union of scientist and engineers who were advocates of TQM worldwide.

Today, we find that Indian manufacturing and service industries are so successful it is because of the implementation of TQM. For instance the auto-component manufacturing units of India have received the highest number of Deming Award for quality next only to Japan. India is also the recipient of CMM Level 5-certified Software Company award. These awards and recognitions have catapulted India to the top most position in Deming award list (termed as the Nobel Prize in the world of manufacturing) of Japan

Detailed Review on Global perspective of TQM

Table6

Authors	Title	Findings	Location
Jiju Antony <i>et.al</i> (2002)	Success factors of TQM implementation in the industry and industry-Hong Kong.	<ul style="list-style-type: none"> Successful TQM practices in industries in Hong Kong is the result certain factors like commitment of the Top management, the contribution of quality department, training and evaluation, workforce involvement and consistent enhancement. For better customer satisfaction there should be harmonious relationship with suppliers, product design and service, quality of data and reports and communications. 	In and around Hong Kong Business Firms
Mile Terziovski and Danny Samson (1999)	The relationship between implementation of TQM practices with organizational performance in various sectors and organization sizes	<ul style="list-style-type: none"> TQM focuses on a strong link performance and business operations, workforce relations and satisfaction of customers. 	In different sectors
Bishnu Sharma and David Gadenne (2001)	Importance and effectiveness of quality management approach	<ul style="list-style-type: none"> ISO 9000 and TQM have been accepted by Australian companies for quality maintenance of both products and services. 	Australian Business firms
M.Sadiq and Teo Boon Hoong (2003)	The implementation of the TQM and organizational performance of small and medium companies in Malaysia with or without ISO 9000.	<ul style="list-style-type: none"> ISO 9000 & TQM have been accepted by Australian companies for quality maintenance of both products and service. ISO 9000 positively impacted organizational output. 	In the Malaysian business organisations

Benchmarking & Evaluation

Decision makers are continuously in search of techniques that will help in order to enhance the Quality implementation and one of the most famous tools of recent days is Benchmarking. Though benchmarking is not new to the world, but lately its subscribers have increased, and it also occupies a recognizable place by helping quality up gradation.

Quite often, the benchmarking concept is taken to be a practice of imitating or copying. But in realism this proves to be a concept that supports innovation instead of imitation, as said by **Thompson and Cox (1997)**.

Benchmarking is an ongoing process that is meant for assessing the quality of products, quality of services and its implementation aligned with its rivals acknowledged as per corporate experts.

According to **Rohlfer (2004)** benchmark has been present that 50 years and has been proved to be a main factor to be a main factor in expediting the success of many organizations in bringing about changes like overall changes in the policies of the firms, enhanced operational functions, Business Process Re-engineering.

Mcgaughey et al, (2005), Yaisn (2002) for many firms benchmarking has been a popularly used tool and universally accepted procedure. It has evolved into a process of TQM for accomplishing performance **Kirby (2005)**. As stated out by **Sisson et al., (2003)** the term benchmarking has been doing the rounds for a significant number of years, but was not used as a tool for quality improvement till the early years of 1980s, when Xerox came into existence it brought down both financial and competitive strain. As per Sisson et al. 2003, the spread of benchmarking as we now know it as, is closely linked with Xerox in the U.S. of A. This gave birth to the first book on this subject by the firm's head on benchmarking in 1980 (Camp, 1989).

The literature on management extensively discusses, ways by which organizations can analyze their performance and to get ideas from other organizations by realizing the importance of those methods Rohlfer, (2004). Garengo et al., (2005), also stated the literature on benchmarking shows their practice covers a whole range of ideas and extols the various forms and activities, because benchmarking is the outcome of the implementation by a number of firms and therefore a continuous development.

Vermeulen (2003) stated that benchmarking is all about identifying, adapting and understanding the best methods that are implemented both in the company and other firms' in order to improve performance. Benchmarking is the latest concept in management and has described in various ways.

The definition of benchmarking given by Xerox Corporation Camp (1989) and McGaughey et al (2005) is: Benchmarking is the constant and consistent procedure meant for assessing the products, services and practices and against their strongest rivals or those firms which are regarded as leading players.. Benchmarking is a continuous effort as practices in the industry keep on changing and it helps strengthening the corporate leaders.(Chen,2002).

According to **Rohlfer(2004)** benchmarking is identified as a continuous process that assess the difference in performance, to help establish 'best practices' and also paves the way for bringing changes in order to fill those gaps identified. Benchmarking ensures that the changes made in the quality improvement process moves in the right direction to excel in competition.

According to Zairi and Hutton, Alcoa, AT&T and Kodak are the wonderful examples of Benchmarking as a concept that stems from TQM. There is a strong tie between enhancement and supervision (Wynn-Williams, 2005; CMA, 1998). Benchmarking should be changes consider to reflect the internal changes and the ever evolving competitive scenario **McGaughey et al,(2005)**

In organizational development, Benchmarking plays a vital role. Research findings conducted in various fields and a host of research works reinforce the belief that the implementations of TQM in firms are indispensable if a firm wants to succeed. The birth of TQM can be traced to early 1920 when production quality control ideas were taking shape. TQM in the early years took shape in Japan and its components can be found in the works of the Juran (1989,) Deming (1986), Ishikawa (1985) Feigenbaum (1983) and Crosby (1979) and can be associated with the development and dominance of the Japanese automobile industry globally. TQM is all about the culture of an organization which includes the attitude and behavior of a firm where in the intention is to supply quality product or service to their customers for the sole purpose of their satisfaction.

According to **Hashmi, (2000)& (2004)** TQM is a major theory in management which bring up together all the functions of a firm with the single purpose of gratifying customer needs, aligned with a firms objectives.

According to **Harnesk and Abrahamsson (2007)**, TQM works on opposites. For instance it establishes power vis a vis manipulation, collectivism vis a vis individualism, standardization vis a vis innovative learning. But today, generally, researchers give emphasis to quality management programmes for organizational progress and getting optimum result in this world of competition. As per their findings a successful model of TQM needs to be in place, which means to have a system which is customer oriented, has a set of management policies which provides quality products or services for a long term competitive advantage.

In the 1980s & 1990s, TQM became a revolutionary concept which held in its sway national business

systems. TQM is usually considered a social movements (Hackman and Wageman, 1995). To quote Samir Baidoun, in the year 2003, components like top management of processes, benchmarking, strategy, partnership policy and resource management were considered as initial contributions meant for practicing TQM.

Faiza Sajjad and Dr. Shehla Amjad have recognized 8 basic factors of TQM through different review of literature on role of benchmarking in TQM and its impact on organizations. The factors are: Benchmarking, Commitment from Top management, Quality planning process, Quality information and analysis, Human Resource Development, Assurance of Quality, Focus on customer satisfaction, Public responsibility

TQM & ISO 9000

In today's globalized market, where dealings with international customers and suppliers are the custom, it is not sufficient for any business to produce high quality products or services. They must also make sure that they are able to meet the standards and necessities that would create reliability in clients towards your company. This additional demand has enhanced the importance of implementing a management system that is wholly quality oriented and this system is named as Total Quality Management System.

Due to its rising extensive acceptance, ISO 9000 has become one of the vital factors in international trade, almost a necessary element for organizations who are into exporting to the European Union (EU) where consumers mostly ask for the ISO 9000 certification **Erel & Ghosh (1997)**.

Presently, the ISO 9000 certification has turned up to be the prime unit of measurement and proof of quality globally, and in this regard to implement a quality system, it has become successful in presenting itself as an excellent support system of the same and ISO 9000 certification as its standard (Escanciano, 2002). Therefore, in the year 1987, the International Organization for Standardization (ISO) located in Geneva published a synchronized set of standards that would ensure quality, known as ISO 9000, and a large number of companies globally have launched the basics of quality management.

The rapid growth of ISO 9000 certification as well as total quality management reveals a strong interest in academic literature. However, though the total quality management and ISO 9000 do not go against the basic principles, these two areas have been puzzled **Martinez-Costa & Martínez-Lorente (2004)**.

CONCLUSIONS

It is quite common in order to find some perplexity in the literature between the implementation of ISO 9000 and TQM as few of the points are common in nature. However, the ISO 9000 is a testimony to others that the company follows universal standardization procedures, while TQM is proposed to be a management system that helps in improving quality internally (Martinez-Costa & Martínez-Lorente, 2004). The payback imputable to the standard is that it composes an excellent march towards a TQM system; generating awareness about quality between workers and also producing an excellent climate for its implementation Sun, 2000; Escanciano et al (2001).

REFERENCES

1. Adam EE Jr. (1994). *Alternative quality improvement practices and organization Performance*. *J. Oper. Manage.* 12(1): 27-44.

2. A hire, L. S., Golhar, D. Y. and Waller, M. A., "Development and validation of TQM implementation Constructs", *Decision Sciences*, 27, 23-56 (1996).
3. Agus, A & Abdullah, M 2000, ' Total quality management practices in manufacturing companies in Malaysia: An exploratory analysis', *Total Quality Management & Business Excellence*, vol. 11, no. 8, pp. 1041-1051.
4. Anderson, J. C., Rungtusanathan, M. and Schroeder, R., "A theory of quality management underlying the Deming management method", *Academy of Management Review*, 19, 472-509 (1994).
5. Black, S. A. and Porter, L. J., "Identification of critical factors of TQM", *Decision Sciences*, Vol. 27, pp. 1-21 (1996).
6. Black SA, Porter CJ (1996). Identification of the critical factor of TQM. *Decision Sci.* 27(1): 1-21.
7. Bayo-Moriones, Merino-Diaz de Cerio, J (2001). Quality management and high performance work practice: Do they coexist. *Int. J. Prod. Econ.* 73(3): 251-59.
8. Chan, YK, Gaffney, P, Neailey, K & Ip, WH 2002, 'Achieving breakthrough performance improvement: results of implementing a fit-for-purpose total management system', *The TQM magazine*, vol. 14, no. 5, pp. 293-296.
9. Deming, E., "Out of the Crisis", Cambridge, MA: MIT (1986).
10. Deming Prize Criteria And accompanying Viewpoints' (n.d), viewed on 13.4.2004, www.deming.eng.clemson.edu/pub/den/deming_prize_2000.pdf.
11. Khanna, VK, Vrat, P, Shankar, R, Sahay, BS & Gautam, a 2003, 'TQM modeling of the automobile manufacturing sector: a system dynamics approach', *Work Study*, vol. 52, no. 2, pp. 94-101.
12. Pheng, LS 2001, 'Towards TQM – integrating Japanese 5-S principles with ISO 9001:2000 requirements', *The TQM Magazine*, vol. 13, no.5, pp. 334-340.
13. The Comparison of the Deming Prize and the Baldrige Award (n.d), viewed on 26.3.2004, [www.gwu.edu/~umpleby/mgt201/201-14\(demingvsbaldrige\).doc](http://www.gwu.edu/~umpleby/mgt201/201-14(demingvsbaldrige).doc)
14. The Guide for the Deming Application Prize 2003 (n.d), viewed 2 Feb 2004, <http://www.juse.or.jp/e/deming/pdf/03_demingGuide2003>
15. J. Antony, K. Leung, G. Knowles and S. Gosh, "Critical success factors of TQM implementation in Hong Kong industries" *International Journal of Quality and Reliability Management*, vol. 19, pp.551-66, 2002.
16. ElhajAbdelmoula, Elsidig Musa and Dr. Isam Khalid Alawad, "The Impact of TQM Practices on Firms' Efficiency and effectiveness : An analytical Study of Saudi Poultry Processing plants" *International Journal of Engineering and Management Science*, vol. 2(3)2011 : 130-138
17. Ahmad, M.F. a, Zakuan, N.b, Jusoh, A.c and Takala, J. d, "Relationship of TQM and Business Performance with mediators of SPC, Lean Production and TPM" *International Congress on Interdisciplinary Business and Social Science 2012, Procedia - Social and Behavioral Sciences* 65 (2012) 186 – 191
18. Arawati Agusa, Za'faran Hassan, "Enhancing Production Performance and Customer Performance Through Total Quality Management (TQM): Strategies For Competitive Advantage", *The 7th International Strategic Management Conference, Procedia Social and Behavioral Sciences* 24 (2011) 1650–1662.
19. Monica Izverciana, Alina Radua*, Larisa Ivascu, Ben-Oni Ardeleanb, "The Impact of Human Resources and Total Quality Management on the Enterprise", *Procedia - Social and Behavioral Sciences* 124 (2014) 27 – 33

20. Qimtek.co.uk. (2017). Dutton Engineering (Woodside) Ltd - Bedfordshire | Qimtek. [online] Available at: <https://www.qimtek.co.uk/profile/dutton-engineering-woodside-ltd> [Accessed 24 May 2017].
21. Anon, (2017). [online] Available at: <http://kafebisnis2010.files.wordpress.com/2011/11/strategic-manag-concept-n-case-hitt-et-al.pdf> [Accessed 24 May 2017].
22. En.wikipedia.org. (2017). Total quality management. [online] Available at: https://en.wikipedia.org/wiki/Total_quality_management [Accessed 24 May 2017].
23. Gharleghi, B. (2017). Determinants of the Total Quality Management Implementation in SMEs in Iran (Case of Metal Industry). [online] Academia.edu. Available at: http://www.academia.edu/27414605/Determinants_of_the_Total_Quality_Management_Implementation_in_SMEs_in_Iran_Case_of_Metal_Industry_ [Accessed 26 May 2017].
24. Anon, (2017). [online] Available at: [http://www.scienceandnature.org/IJEMS-Vol2\(3\)-July2011/IJEMS_V2\(3\)5.pdf](http://www.scienceandnature.org/IJEMS-Vol2(3)-July2011/IJEMS_V2(3)5.pdf) [Accessed 26 May 2017].
25. HOLUSHA, J. (2017). W. Edwards Deming, Expert on Business Management, Dies at 93. [online] Nytimes.com. Available at: <http://www.nytimes.com/1993/12/21/obituaries/w-edwards-deming-expert-on-business-management-dies-at-93.html?pagewanted=all> [Accessed 26 May 2017].
26. Strategic Inventory Management. (2017). Deming's Point # 1: "Create constancy of purpose". [online] Available at: <http://www.strategicinventorymanagement.com/blog/demings-point-1-create-constancy-of-purpose> [Accessed 26 May 2017].
27. Anon, (2017). [online] Available at: <http://www.dtic.mil/dtic/tr/fulltext/u2/a256399.pdf> [Accessed 26 May 2017].
28. <http://shodhganga.inflibnet.ac.in>. (2017). Chapter 2: TQM – A Strategic Tool for Quality. [online] Available at: http://shodhganga.inflibnet.ac.in/bitstream/10603/15886/10/10_chapter%202.pdf [Accessed 26 May 2017].
29. Anon, (2017). [online] Available at: http://shodhganga.inflibnet.ac.in/bitstream/10603/15886/10/10_chapter%202.pdf [Accessed 26 May 2017].
30. www.iracst.org/ijcbm/. (2017). Total Quality Management: A need for a Sustainable Competitive Advantage. [online] Available at: <http://www.iracst.org/ijcbm/papers/vol5no32016/19vol5no3.pdf> [Accessed 26 May 2017].
31. En.wikipedia.org. (2017). Philip B. Crosby. [online] Available at: https://en.wikipedia.org/wiki/Philip_B._Crosby [Accessed 26 May 2017].
32. S.L. A hire, D.Y. Golhar and Waller M A, "Development and validation of TQM implementation constructs", *Decision Sciences*, vol. 27, pp. 23-5, 1996.
33. Rogers, D.S., P.J. Daugherty and A.E. Ellinger, 1996, *The Relationship between Information Technology and Warehousing Performance*, *Logistics and Transportation Review* 32 (4), 409-421
34. Elsiddig, E. (2017). The Impact Of Adoption Of Tqm Practices On Firms' Efficiency And Effectiveness: An Analytical Study Of Saudi Poultry Processing Plants. [online] Khartoumspace.uofk.edu. Available at: <http://khartoumspace.uofk.edu/handle/123456789/20463> [Accessed 29 May 2017].
35. Lakhe, R., & Mohanty, R. (1994). Total Quality Management. *International Journal of Quality & Reliability Management*, 11(9), 9-33. doi:10.1108/02656719410074279
36. Awan, M. U., Raouf, A., Ahmad, N., & Sparks, L. (2009). Total quality management in developing countries. *International Journal of Pharmaceutical and Healthcare Marketing*, 3(4), 363-380. doi:10.1108/17506120911006056

37. Kapur, S. (2013, January 20). India's quality revolution. Retrieved May 31, 2017, from http://www.business-standard.com/article/management/india-s-quality-revolution-110100400070_1.html